THREE COROPHIOIDS (CRUSTACEA: AMPHIPODA) FROM WESTERN PORT, VICTORIA

By J. L. Barnard* and Margaret M. Drummond†

*Smithsonian Institution, Washington, D.C. 20560, USA
†National Museum of Victoria, 285-321 Russell Street, Melbourne, Victoria 3000

Abstract: Species in three genera of the superfamily Corophioidea are described for the first time in modern context. *Baracuma alquirta* gen. et sp. nov. (Ischyroceridae) lies close to the traditional *Cerapus* of the literature, a cosmopolitan genus of diverse form. A new species of the cosmopolitan *Laetmatophilus*, *L. dabberi*, (Podoceridae) is fitted into a world key. The unusual *Leipsuropus parasiticus* (Podoceridae) is redescribed.

New material of three corophioid Amphipoda from Victoria permits detailed descriptions of a new genus *Baracuma* (Ischyroceridae), a new species of *Laetmatophilus* (Podoceridae) and the unusual *Leipsuropus parasiticus* (Podoceridae). *Baracuma* is close to *Cerapus* and *Runanga* Barnard 1961. A key to the species of *Laetmatophilus* is provided to distinguish this new species within the genus. *Leipsuropus* is one of the most unusual gammaridean amphipods known because of the selective loss of uropod 2; generally, in an evolutionary cycle, gammaridean amphipods lose uropod 3 first and then uropod 2 but in *Leipsuropus* a small uropod 3 is retained.

The study was initiated and the major part of it carried out at the Marine Studies Group of the Ministry for Conservation in Victoria during J. L. Barnard's visit to Australia in 1976. Materials came from the two major benthic Surveys of Western Port: Crib Point Benthic Survey, 1964-5 (CPBS) and the Westernport Bay Environmental Study, 1973-4 (WPBES). The Australian Museum, by courtesy of Dr J. K. Lowry, Curator of Crustacea, loaned specimens from the Old Collection for use in the *Leipsuropus parasiticus* study, and made available type material for examination. Details of the Western Port Surveys have been published previously by Barnard and Drummond (1978) and much of the literature on Australian amphipods can be traced by consulting the same reference.

LEGENDS

Capital letters and numbers on the figures denote parts, as follows:
A, antenna; B, body or carcass; C, coxa; D, dactyl; E, epistome, left view; F, accessory flagellum; G, gnathopod; H, head; I, inner plate of maxilliped; J, ramus; K, variable, see legend; L, lower lip = labium; M, mandible; N, molar; O, palp; P, pereopod; Q, pleopod; R, uropod; S, maxilliped; T, telson; U, upper lip = labrum; V, brood plate; W, pleon; X, maxilla; Y, gill; Z, gland.

The figures each contain illustrations from a master specimen listed first in the caption of each figure and no lower case letters are placed on these figures; subsidiary specimens on each figure are denoted by lower case letters as specified in the caption for each figure.

SYSTEMATICS

Superfamily COROPHIOIDEA
Family ISCHYROCERIDAE

Three kinds of *Cerapus*—like genera are now recognizable. The first of these to be described as distinct from *Cerapus* was *Runanga* Barnard (1961) which differed markedly in many characters. Later, McCain (1969) described a second species, *Runanga waiora* which lessened the distance between the old concept of *Cerapus* and the more distant *Runanga*. To some extent our new genus also lessens this distance, but examination of species of so-called *Cerapus*, of which *C. tubularis* Say is the type-species, reveals generic distinctions.

Genus **Baracuma** gen. nov.

Diagnosis: Thorn-like appearance of rostrum weak. Article 1 of antenna 1 untoothed, articles 2 and 3 elongate, longer than article 1, primary flagellum much longer than any peduncular article, accessory flagellum absent. Antenna 2 slender, slightly longer than antenna 1, flagellum of male as long as article 5 of peduncle. Mandibular palp with 3 normal articles. Inner plate of maxilla 1 with one large seta. First 3 and last 2 coxae short, not touching serially; pereonite 2 in neither sex differentially elongate in comparison to pereonite 1; male coxa 1 much shorter than segment 1; coxa 5 of both sexes longer than pereonite 5, coxa 5 in female almost asetose and folding to meet partner ventrally; only female pereonite 5 much longer than pereonite 1. Gnathopod 1 normally subchelate. Gnathopod 2 in female simple though article 6 slightly inflated, article 2 not heavily setose anteriorly; gnathopod 2 in male very large, essentially carpochelate, these two teeth of carpus gaping. Article 3 of pereopod 4 elongate. Pleopod 3 with 2 rami. Uropod 3 with one small ramus. Uropod 2 with one vestigial, mostly fused ramus bearing 2 hooks. Telson narrow, cleft halfway, apices armed with rows of studs. Male with ventral keel.
Type Species: *Baracuma alquirta* gen. et sp. nov.
Relationship: In the absence of the type specimen of *Cerapus tubularis* Say 1817, and of an unequivocal diagnosis of the genus, comparison of *Baracuma* with

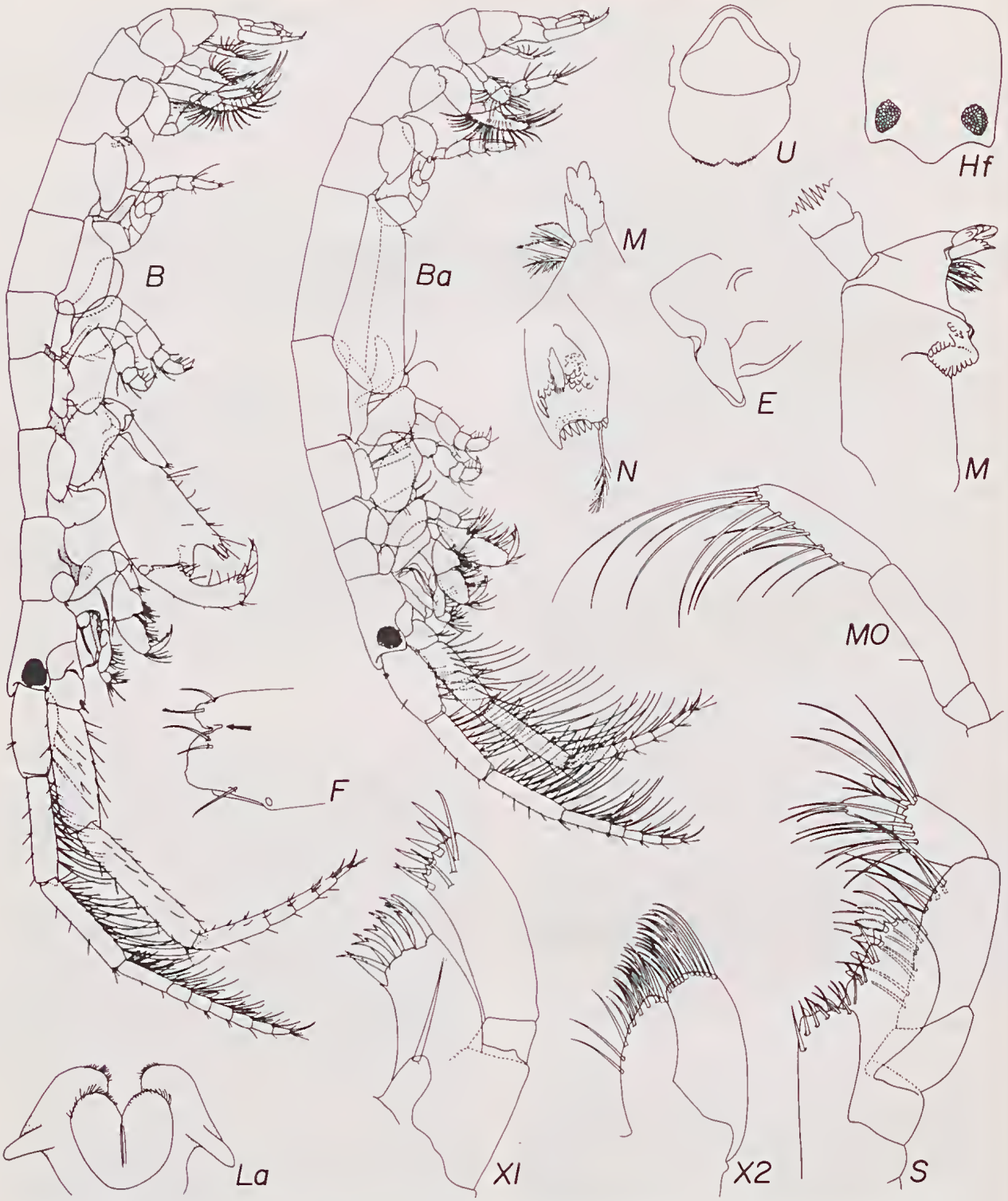

Fig. 1—*Baracuma alquirta* new species, holotype male "b" 3.92 mm; a = female "a" 3.56 mm; f = female "f" 3.40 mm.

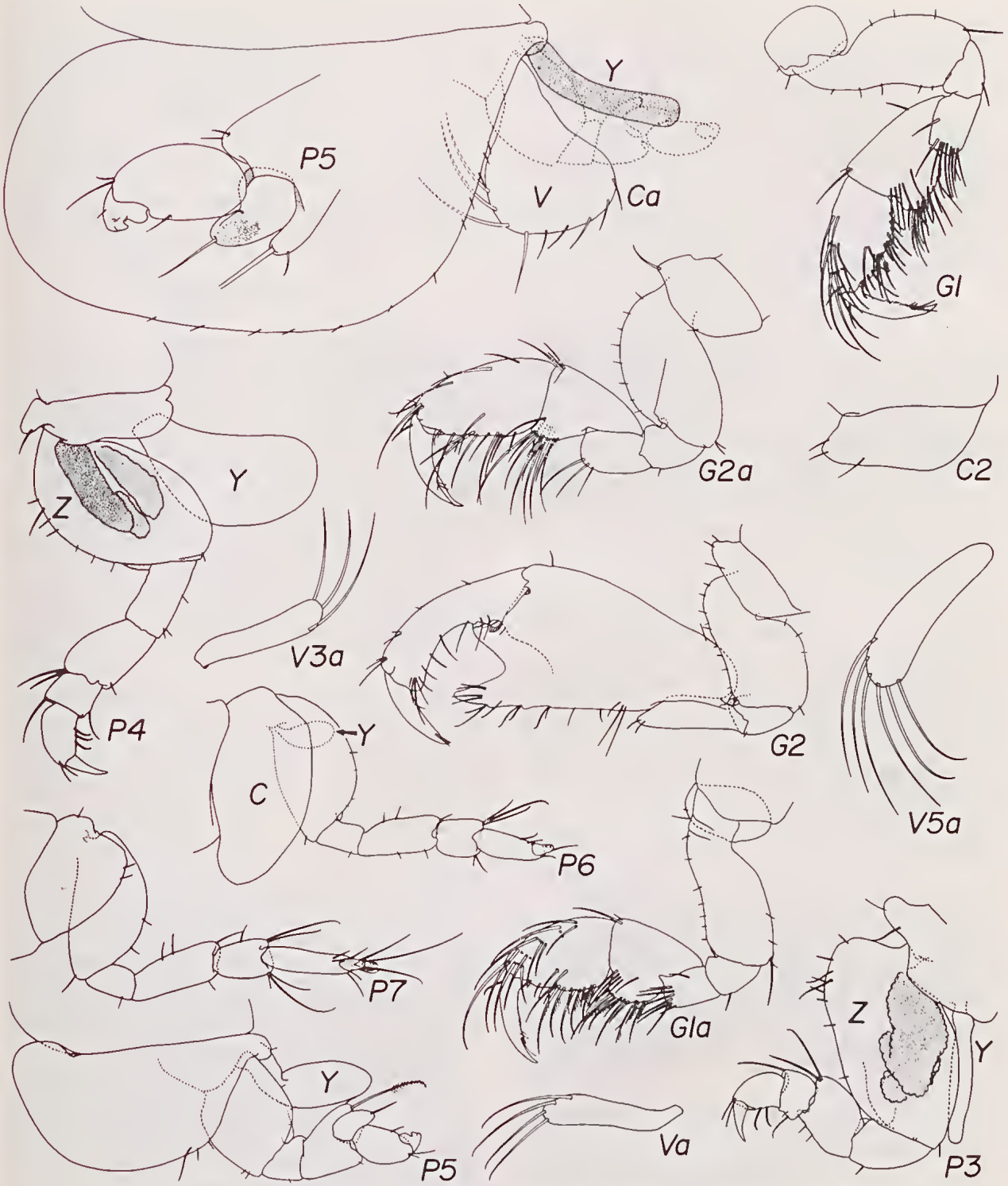

Fig. 2—*Baracuma alquirta* new species, holotype male "b" 3.92 mm; a = female "a" 3.56 mm.

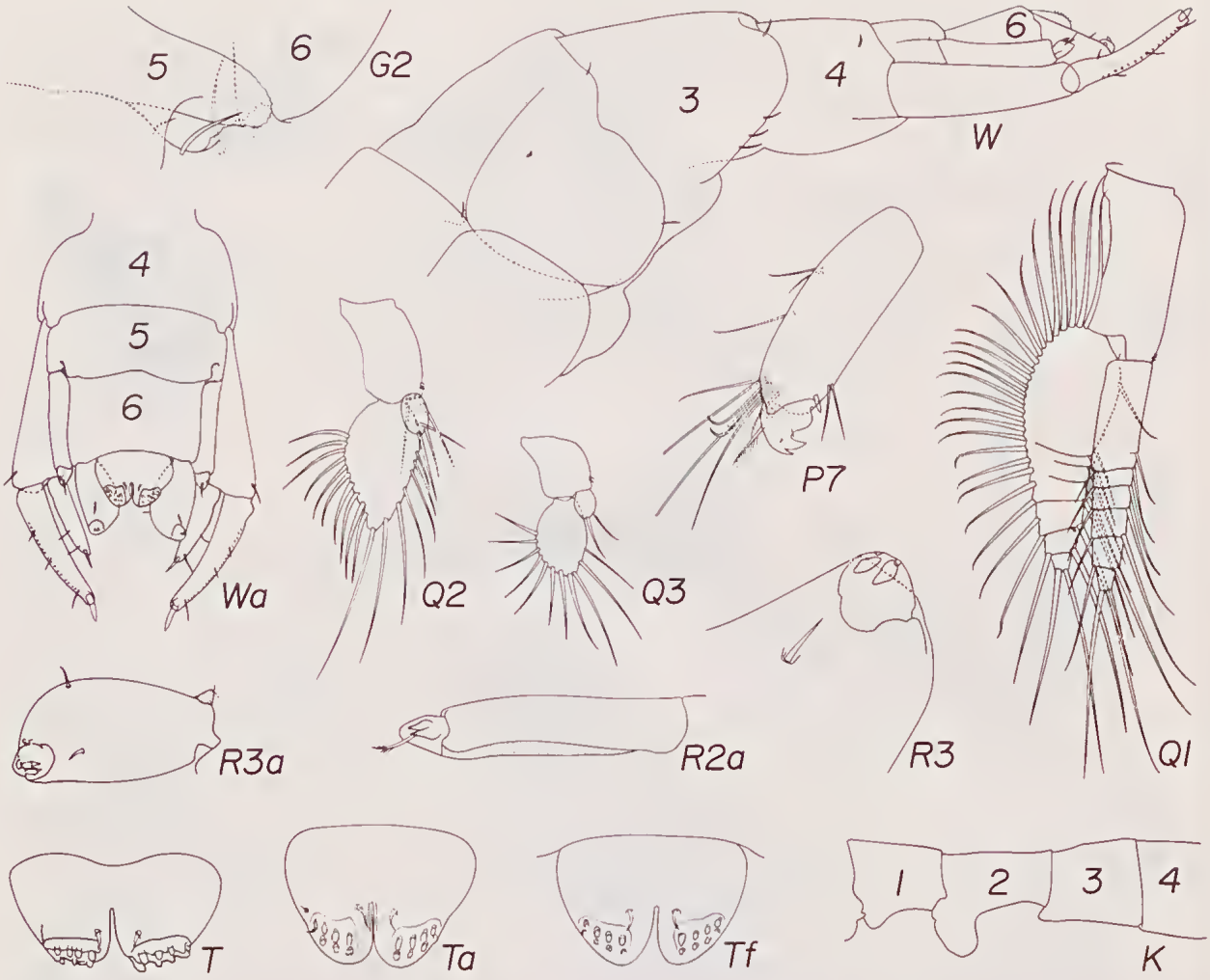

Fig. 3—*Baracuma alquirta* new species, holotype male "b" 3.92 mm; a = female "a" 3.56 mm; f = female "f" 3.40 mm; K = lateral thoracic sternites.

C. tubularis must be made from re-description of the species by S. I. Smith (1880), Stebbing (1906) and the illustrations of the female by Bousfield (1973). Whether Smith and Bousfield were even dealing with the same species seems uncertain in view of, for example, the difference in the telson, as illustrated, and in the relative lengths of the pereonites as described or figured by the two.

Smith found only 3 pairs of gills and 3 pairs of brood plates, but classic *Cerapus tubularis* specimens in Smithsonian collections have formulas identical with *Baracuma*. In a very detailed description, Smith did not mention either a ventral keel on the male nor an exceptionally elongate female coxa 5 with folding capability. Both are very noticeable features.

The genus differs from *C. tubularis* as conceived of from Bousfield's illustrations of the female, and from examination of specimens at the Smithsonian Institution, in the irregular form of coxae 1-4, the elongate coxa 5 of both sexes, the apically narrowed poorly cleft telson, and the male ventral keel. *Baracuma* differs from the classic *C. crassicornis* (Bate), as described and figured by Sars (1895), additionally, in the absence of a dorsal tooth on article 1 of antenna 1, and in the shorter, thicker second and third peduncular articles.

Baracuma differs from *Runanga* in the absence of an accessory flagellum, the longer coxa 5 and its folding capability in the female, the poor development of setae on female coxa 5, the lack of long dense setae on the anterior margin of article 2 of female gnathopod 2, and the narrow telson.

Runanga waiora McCain 1969 bears a scale-like accessory flagellum, has a broad telson, and does not have the special characteristics of female coxa 5 found in *Baracuma*.

Baracuma appears to be fairly close to the Australian species of *Cerapus*, but again, the narrow telson, the shape of female coxa 5, and the male ventral keel are

strong distinctions. Australian species of *Cerapus* differ from the Northern Hemisphere concept of the genus in the lack of dorsal teeth on article 1 of antenna 1, the elongate articles 2 and 3 of antenna 1, the lack of sexual distinction on pereonite 1 and its coxa, and in the elongate article 3 of pereopod 4.

The narrow telson distinguishes *Baracuma* from all other *Cerapus*-like taxa. This telsonic form has the appearance of being most primitive in the group; but other adaptations, such as elongation of body segments and coxa 5, appear to be advanced characters.

Baracuma alquirta gen. et sp. nov.

Figs 1-3

Description of the Male: Head as long as pereonite 5, the longest pereonite; pereonites 3 and 4 shortest. Rostrum short, blunt, broadly tapered. Eyes darkly pigmented. Peduncular articles of antenna 1 subequal in length, first article broad, dorsoventrally expanded, lacking distodorsal cusp; articles 1 and 2 long and rectangular; flagellum much longer than peduncular article 3, 7-articulate, first article nearly as long as combined length of next two; locus of accessory flagellum (near 2 setae) marked only by invagination attached to tangent reflecting internal ridge probably representing vestigial accessory flagellum. Peduncle of antenna 2 rather stouter than that of antenna 1, article 5 longer than article 4; flagellum subequal to or longer than article 5 of peduncle; first article longer than combined lengths of second and third.

Mandibular incisors with 6 teeth; left lacinia mobilis broad, right rather narrower, both toothed; left mandible with 3 rakers, right with 2; each molar with scaled flake, articles 2 and 3 of palp slender, subequal in length, only article 3 with setae.

Lower lip with inner lobes and short, splayed mandibular processes.

Inner plate of maxilla 1 small, with one long stout apical seta; outer plate with 11 spines; right and left palps alike with about 6 apical spine-setae and 3 subapical setae. Both plates of maxilla 2 apically setose, inner with a few widely-spread apico-medial and medial setae. Inner plate of maxilliped truncate, with 3 stout apical teeth and a crescent of apical setae; outer lobe spined, and with a few medial setae; article 2 of palp medially setose; article 3 with subapical spray of long setae; article 4 stout, blunt, tipped with 3 setae.

Coxae 1-4 very shallow, different from each other and irregular in shape. Coxa 1 very small, rounded, set on extreme anteroventral angle of pereonite 1; coxa 2 shorter than pereonite 2, attached well towards posterior margin of its pereonite, resultant gap between coxae 1 and 2 revealing distinctively enlarged part of ventral keel. Coxa 5 longer than pereonite 5, bulged anterodorsally to overlap coxa 4, and with vestigial posterodorsal lobe extending beyond posterior margin of pereonite. Coxa 6 larger than coxa 7, both irregular in shape. Coxal gills present on pereonites 3-6, largest and inflated on pereonite 4; strap-shaped on pereonites 3 and 5; very small on pereonite 6.

Gnathopod 1 subchelate, articles 5 and 6 subequal. Gnathopod 2 carpochelate, outer tooth on article 5 straight in line with posterior margin, deep sinus between outer and inner teeth; article 6 narrow, less than half as wide as article 5.

Article 2 of pereopod 3 broader than that of pereopod 4, bulging anteroproximally; article 3 of pereopod 4 longer than articles 4, 5 or 6. Percopod 5 shorter and stouter than pereopods 6 or 7, articles 4, 5 and 6 inflated, articles 4 and 6 almost surrounding article 5; dactyl stout, recurved. Pereopods 6 and 7 similar, pereopod 7 slightly the longer, dactyls of both with broad, bulging base and two-toothed apex.

Epimera posteroventrally rounded; epimeron 3 with several short ventral setae.

Pleopods decreasing in size; pleopod 1 with 2 long setose rami, inner longer, outer broader; outer rami of pleopods 2 and 3 leaf-shaped, setose; inner rami of both very small, ovate.

Peduncle of uropod 1 reaching beyond the apex of urosomite 3; outer ramus longer than inner, with short lateral setae and apical spine. Uropod 2 with one very short ramus tipped with a seta. Peduncle of uropod 3 inflated; ramus vestigial, fused, with 2 apical and 2 accessory hooks.

Telson nearly 80% as long as wide, cleft about 50%, narrowing to rounded apices each with 2 sets of apical studs.

Description of female: Antennae shorter than those of male, peduncle of antenna 2 relatively more slender; flagella of both antennae 5-articulate. Pereonite 5 much longer than in the male, longer than any other pereonite, though pereonite 4 also elongate; pereonites 1 and 2 shortest. Coxae 1-4 shallow, of different shapes; coxa 4 longer than 1, 2 or 3; coxa 5 enormously elongate, longer than pereonite 5, much longer than deep, almost asetose and folding to meet partner of opposite side in midventral line.

Hand of gnathopod 1 better developed than in male.

Brood plates present on pereonites 2-5; that on pereonite 5 large and distally expanded; others short and slender.

Pleopod 2 and epimera like male "b", but epimeron 3 with only 2 ventral setae. Pleopod 3 with only one seta on inner ramus, 10 on outer.

Ventral keel absent except for protruding support for maxillipede on sternite 1. Female otherwise resembling male.

Only domiciliary tube found in collection about 8 mm long, very dark, blackish-green in colour, round in section, broader at one end, smoothly and evenly constructed, containing female.

Illustrations: Maxilla 1 enlarged more than maxilla 2. Unfolded coxa 5 of female drawn to same enlargement as coxa 5 of male by overlaying respective fifth pereopods; brood plates of coxae 3 and 4 enlarged to this same degree. Gnathopod 1 and pereopods 3-7 at same magnification. Apex of pereopod 6 like that shown for pereopod 7. Male telson unflattened.

HOLOTYPE: NMV J1256, male "b" 3.92 mm.
TYPE LOCALITY: CPBS 41N/1, Australia, Victoria, Western Port. 24 Steptember 1973, 12.8m, fine gravel and sand with mud.
PARATYPES: Type-locality, femalc "A" 3.56mm, J1266, CPBS 32N/367, female "f" 3.40 mm, J1267; CPBS 12N, 1975, male, female in domiciliary tube, J1287.
MATERIAL: CPBS, 40 samples from 15 stations (92 specimens); WPBES, 7 samples from 5 stations (15 specimens).
DISTRIBUTION: Australia, Victoria, Western Port, 5-18.3 m, sand, gravelly sand, muddy sand, coarse sand and shell, coarse sand and mud.

Family PODOCERIDAE

Genus **Laetmatophilus** Bruzelius

Key to the species of *Laetmatophilus*

1. Head with one or more distinct dorsal teeth 2
   Head lacking distinct teeth 5
2. Pereonites transversely rugose but lacking multiple transverse teeth dorsally ..... *L. tuberculatus*
   Pereonites with multiple transverse teeth dorsally 3
3. All pereonites with teeth on midline ..... *L. hala*
   Some pereonites with teeth set sagitally in pairs on either side of midline 4
4. Anteroventral corner of head with sharp tooth, at least 5 pereonites and pleonites with 4 or more teeth each ..... *L. hystrix*
   Anteroventral corner of head quadrate, only one pereonite or pleonite with more than 2 dorsal teeth ..... *L. armata*
5. Outer ramus of uropod 1 much less than half as long as inner ramus (dactyl of male gnathopod 2 not overlapping palm) ..... *L. dabberi*
   Outer ramus of uropod 1 more than half as long as inner ramus 6
6. Hand of gnathopod 1 very slender (incl. *L.* sp. Sivaprakasam 1970) 7
   Hand of gnathopod 1 stout 8
7. Dactyl of male gnathopod 1 fitting palm ..... *L. durbanensis*
   Dactyl of male gnathopod 1 overlapping palm ..... *L. leptocheir*
8. Palm of male gnathopod 2 with 2 teeth ..... *L. purus*
   Palm of male gnathopod 2 with 3 teeth ..... *L. tridens*

Laetmatophilus dabberi sp. nov.

Figs 4, 5

DIAGNOSIS: Head lacking dorsal teeth, anteroventral corner with small cusp, cephalic lobe with cusp, anteroventral corner of first antennal podium with small cusp. Pereonite 1 with 2 low transverse humps, pereonite 2 with one similar hump, pereonite 3 to pleonite 2 with dorsal hump or carina on midline, pleonite 3 weakly humped; pleonites laterally with plaques, especially in female; pereonites 5-7 coalesced. Coxae 2-4 with ventral points. Articles 2 and 3 of gnathopod 2 with sharp anteroventral cusp(s), articles 3-4 with sharp posterodistal cusp; dactyls of gnathopods 1-2 fitting palm; male gnathopod 2 palm with 3 teeth, 2 of these near defining corner sharp, third tooth flat and representing most of palm; female gnathopod 2 with strongly convex simple palm. Outer ramus of uropod 1 much less than half as long as inner ramus.
DESCRIPTION: See illustrations. Specimens mostly with missing appendages, only pereopods 4 and 6 of adult percopods 3-7 recovered and illustrated; right and left gnathopod 2 of male "b" of different sizes (illustrated); young male gnathopod 2 like female. Gills thin, borne on coxae 2-7 in female, 2-6 on male; brood plates very broad and setose, borne on coxae 2-4. Peduncles of pleopods longer than wide, each with 2 coupling hooks, no other major setae, rami subequal, article 1 elongate, counts of articles on pleopods 1-3, outer and inner, of male "h" = 3-4, 5-5 and 5-5.
ILLUSTRATIONS: Detached antenna 2 of male "m" drawn to same enlargement as body of male "h". Medial texture on dactyl of gnathopod 1 with basal limit marked on Figure 5 G1h by dashed line, then enlarged in Figure 5 DG1h.
HOLOTYPE: NMV J1279 male "b" 3.64 mm.
TYPE LOCALITY: WPBES 1746/2, Western Port, 25 November 1974, 24 m, gravelly coarse sand, Victoria, Australia.
PARATYPES: Type locality, female "a" 3.14 mm J1280, juvenile "c" 1.91 mm J1282, male "m" 2.21 mm J1281, male "p" 2.60 mm J1283; WPBES 1747/3, female "f" 3.20 mm J1284, male "g" 3.34 mm J1285, male "h" 2.80 mm J1286.
RELATIONSHIP: The short outer ramus of uropod 1 coupled with lack of multiple teeth on body segments and unextended dactyl of gnathopod 1 distinguish this species from any others known. *Laetmatophilus hystrix* and *L. hala* from Australia and Hawaii respectively, have multiple teeth on body segments. The species in couplets 7 and 8, from Africa or the Indian Ocean, all have a much longer outer ramus of uropod 1 than does *L. dabberi*, those of couplet 7 also having a thin hand on gnathopod 1. Both *L. purus* and *L. tridens* have a male gnathopod 2 like *Podocerus* with the dactyl and palm occupying the full posterior margin of the hand.
MATERIAL: WPBES, 2 samples from 2 stations (9).
DISTRIBUTION: Australia, Victoria, Western Port, sand.

Genus **Leipsuropus** Stebbing 1899

Leipsuropus Stebbing 1899, p. 241; 1906, p. 698.
TYPE SPECIES: *Cyrtophium parasiticum* Haswell (monotypy). Unique.
DIAGNOSIS: Accessory flagellum vestigial; antenna 1 shorter than antenna 2; some coxae touching each other or weakly overlapping; pereonites 6-7 amalgamated; urosome with 3 segments, uropod 1 well developed, uropod 2 absent, uropod 3 forming small setose leaf lacking rami.
REMARKS: Barnard (1969) did not accept Haswell's and Stebbing's observations on the absence of uropod 2 but

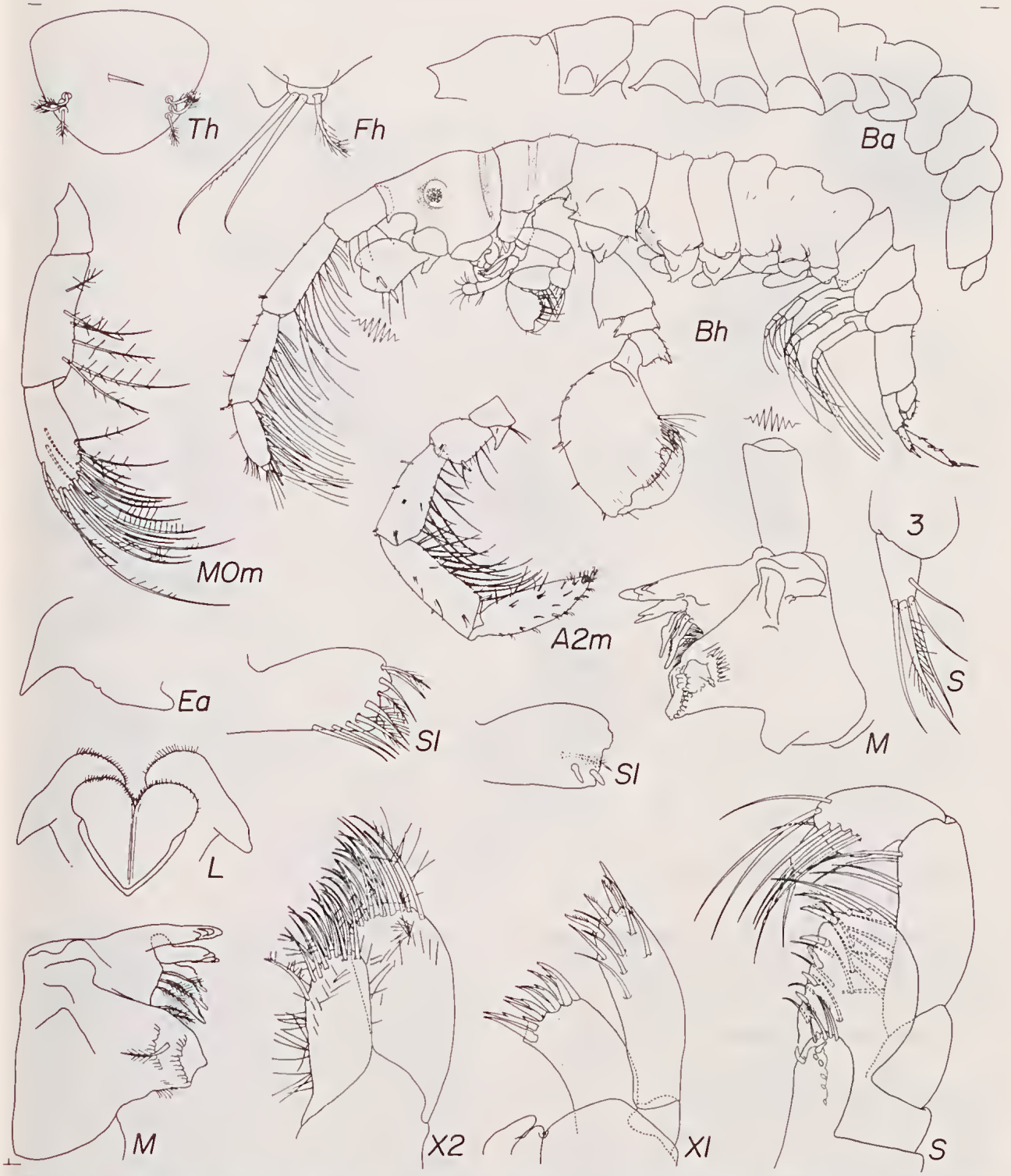

Fig. 4—*Laetmatophilus dabberi* new species, holotype male "b" 3.64 mm; a = female "a" 3.14 mm; h = male "h" 2.80 mm; m = male "m" 2.21 mm.

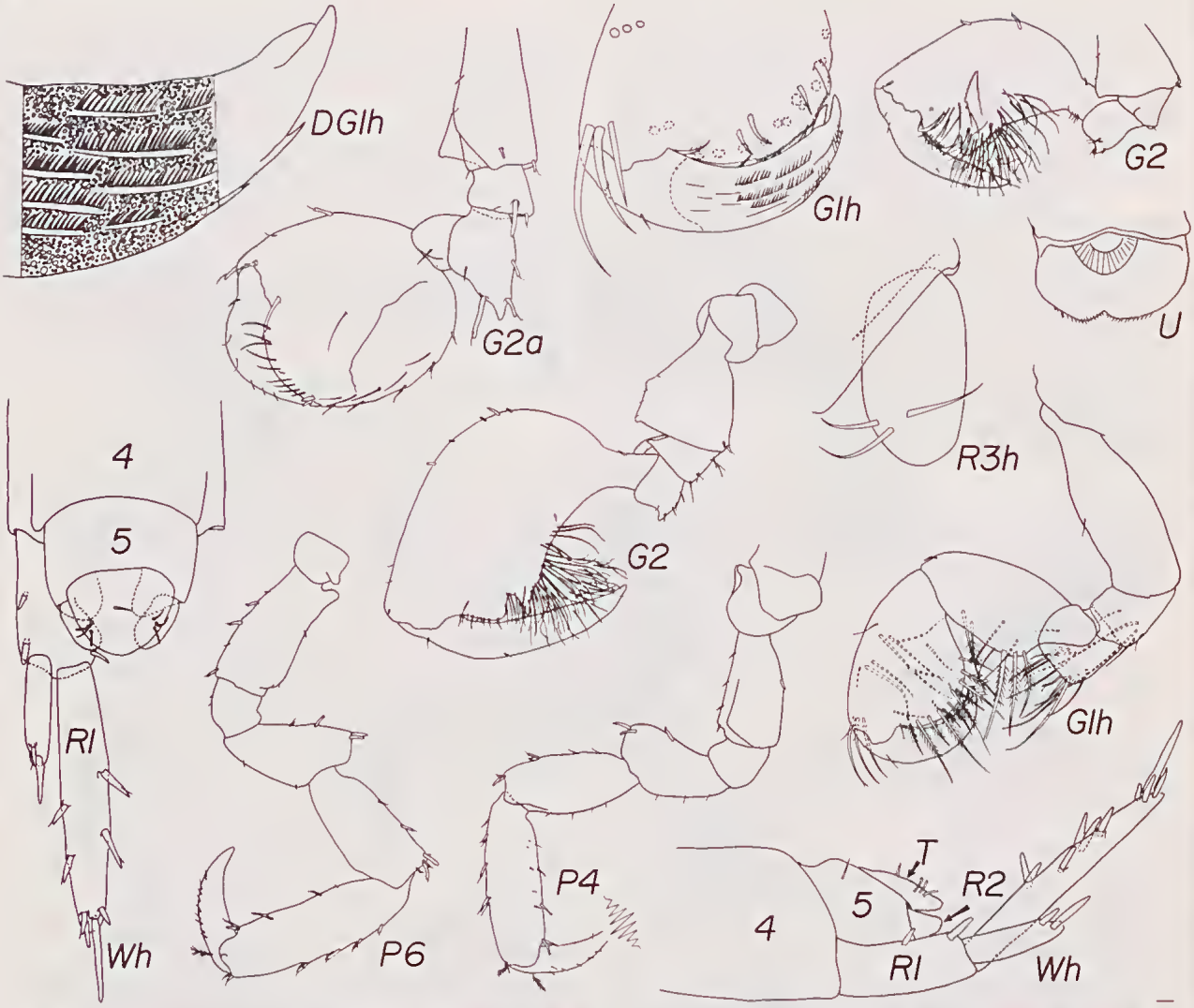

Fig. 5—*Laetmatophilus dabberi* new species, holotype male "b" 3.64 mm; a = female "a" 3.14 mm; h = male "h" 2.80 mm.

they were indeed correct as shown in the illustrations for the type-species presented below. The diagnosis is revised to show the presence of a vestigial accessory flagellum and the fusion of pereonites 6-7.

Leipsuropus parasiticus (Haswell 1879)

Figs 6, 7

Cyrtophium parasiticum Haswell 1879, p. 274; 1882, p. 271; 1885, p. 108, pl. 17 figs 1-7.

Leipsuropus parasiticus Stebbing 1906, p. 699; 1910, p. 650.

Description: Rostrum small, thin, blunt; ocular lobes forming lateral nacelles, apex of head broad in lateral view, forming weak cavity for reception of antenna 1. Article 2 of antenna 1 about twice as long as article 1, scarcely longer than article 3, primary flagellum composed of 4 articles together shorter than 3, first article elongate, accessory flagellum vestigial, antenna 1 strongly setose ventrally. Antenna 2 much larger than antenna 1, article 5 of peduncle almost 1.4 times as long as article 4, these two articles moderately setose ventrally, flagellum about as long as article 4 of peduncle, composed of one elongate article tipped with 2 vestigial articles.

Epistome with large anterior tooth, upper lip incised ventrally. Right mandibular incisor with 5 teeth, left with 4, right lacinia mobilis with 3 or 4 teeth, left with 4, right rakers 2, left 3, right molarial seta elongate, left short; palp article 3 short, clavate, heavily setose. Mandibular lobes of lower lip thin. Inner plate of maxilla 1 obsolescent, asetose, outer plate with 8 spines, right and left palps similar. Inner plate of maxilla 2 lacking submarginal setae. Palp article 4 of maxilliped short, stubby, with 2 apical rows of setae.

Coxae poorly setose; coxa 1 broadly produced anterodistally, boot-shaped; ventral margins of coxae 2-4 sinuate, coxae 2 and 3 rounded-quadrate, coxa 4

Fig. 6—*Leipsuropus parasiticus* (Haswell), male "d" 2.95 mm; g = female "g" 3.32 mm; k = female "k" 2.85 mm; m = male "m" 4.41 mm.

broader than tall; female coxae 2-4 anteroposteriorly elongate, much broader than tall, sinuate, coxa 3 larger than coxa 2, coxa 4 very large.

Gnathopod 1 of both sexes similar, article 2 not cuspidate. Gnathopod 2 of male enlarged, article 2 with sharp apicolateral cusp, apicomedial lobe blunt and enlarged, articles 4 and 5 with posterior conical projection, article 5 almost obsolescent; hand large, longer than broad, palm carved into giant proximal defining tooth separated by large sinus from sinuate, irregularly scalloped distal marginal blade, entire palm and posterior margin of hand moderately setose, dactyl long, and in terminal males, strongly overreaching palm; female gnathopod 2 very small, appearing almost as if regenerant or stunted, articles 2, 4 and 5 unornamented, hand of simple gammarid type with almost transverse and simple palm and weak defining tooth, dactyl scarcely overreaching palm.

Articles 5-7 poorly setose on pereopods 3 and 4, more strongly on pereopods 5, 6 and 7.

Pereonites with transverse dorsal rugae, weaker in female than in male, pereonites 6 and 7 fused together; pereonites 2-3 and 4-5 with especially well developed anterior or posterior projections above coxae. Pleonites dorsally untoothed; epimera naked.

Uropod 1 well developed and spinose, outer ramus shorter than inner; uropod 2 absent; uropod 3 forming small setose leaf, lacking rami and hidden beneath telson. Telson broad, short, linguiform, each side with triad of dorsal penicillate setules.

Male "t", Port Jackson: Hand of gnathopod 2 five percent narrower than in figured male (measuring anterior margin to base of proximal tooth), main palmar projection and proximal narrow tooth much shorter than in figured male; hand thus appearing to be much narrower than in fully developed Victorian male but actual width scarcely distinct and most of narrowness owing to poorly developed sculpturing.

Observations: Most specimens lacking all or parts of antenna 2 and pereopods 5-7, often lacking pereopods 3-4, illustrated pereopods picked from different specimens, best specimen juvenile male "p" with pereopods 6 and 7 observed, article 5 of pereopod 5 stouter than that illustrated for male "n"; antenna 1 of male "m" as shown for female "k".

Intersexes: Intersexes were found at five Western Port stations:

(1) CPBS 32S/1, J1257: One individual (out of 13 in sample) with very large, asetose brood plates and typically female coxae 2-4 in addition to well developed penes. Gnathopod 2, though smaller than normal for a male of the size, larger than the normal female hand, with 2 proximal teeth and 2 sinuses, with the finger fitting into the most proximal sinus.

(2) CPBS 32S/367: One specimen (out of two) closely resembling the above. (In the Ministry for Conservation Marine Studies Division Collection.)

(3) CPBS 33N/3, J1276: One specimen, resembling the two above, but with only one palmar sinus.

(4) CPBS 35N/2, J1277: One specimen with half-grown, asetose brood plates and typical female coxa 4, well developed penes and broad, inflated gnathopod 2, bearing one proximal tooth and with one sinus.

(5) CPBS 61N/1, J1278: One specimen with large, asetose brood plates, female coxae 2-4 and well developed penes; but gnathopod 2 hand closer to male type, with fairly oblique palm.

Illustrations: Antenna 2 drawn to same magnification as antenna 1; spination obscured by agglutinates, probably not complete; female gnathopod 2 drawn as right sided attached to left coxa; female gnathopods 1-2, pereopod 3 and coxa 4 equally magnified.

Types: AM "G. 5388, *Cyrtophium parasiticum* Hasw., Port Jackson, *Type*, Old Coll 3 sp.", later added to card "3-4 fms 1879 P.T.O. 320.1"; 3 specimens mounted on white plate with gum in alcohol; one female and one male removed Nov 4 1976; female corresponds with illustrations herein; male gnathopod 2 satisfactory but urosome too occluded with deposit to determine identity; both specimens replaced in 2 tiny vials with white plate carrying third specimen. Special techniques will be required to remove occlusions from male to prepare as lectotype.

Other Material: Male "t" 3.40 mm, AM P3426, *Cyrtophium parasiticum* and 13 spcs. Port Jackson Old Coll (= narrow-handed form).

Voucher Material: CPBS 32S/1, male "d" 2.95 mm J 1270, female "g" 3.32 mm J1269, female "k" 2.85 mm, J1268; WPBES 1746/2, young male "p" 2.55 mm, J1272, female "q", J1271; WPBES 1747/2, male "m" 4.41 mm, J1273, male "n" 4.35 mm, J1274.

Material: CPBS, 11 samples from 6 stations (26 specimens); WPBES, 3 samples from 3 stations (17 specimens); AM P3426, 1 sample (14 specimens).

Distribution: Australia, Western Port, Victoria, and Port Jackson, New South Wales, 12-24 m, sand, muddy sand, and muddy sand and gravel.

ACKNOWLEDGEMENTS

In an earlier paper (Barnard & Drummond 1978) acknowledgement of the help from many individuals and organizations during the Westernport Bay Survey was expressed and is reiterated here. In connection with the present study special acknowledgement is made to Dr Alistair Gilmour, Officer-in-Charge of the Marine Studies Group in 1976, and to Danuta Karpow, for technical assistance.

At the Smithsonian Institution thanks are due to Carolyn Cox and Irene F. Jewett who prepared the sketches for press, and to Elizabeth B. Harrison and Janice Clarke for technical assistance. The authors are deeply indebted to Dr Dillon S. Ripley, Secretary of the Smithsonian Institution, who made it possible for J. L. Barnard to come to Australia; and that author extends his personal thanks to members of the Marine Studies Group, and in particular to Dr Alistair Gilmour and Dr Jerry D. Kudenov, for many kindnesses during his visit.

This publication is No. 324 in the Ministry for Conservation, Victoria, Environmental Studies Series.

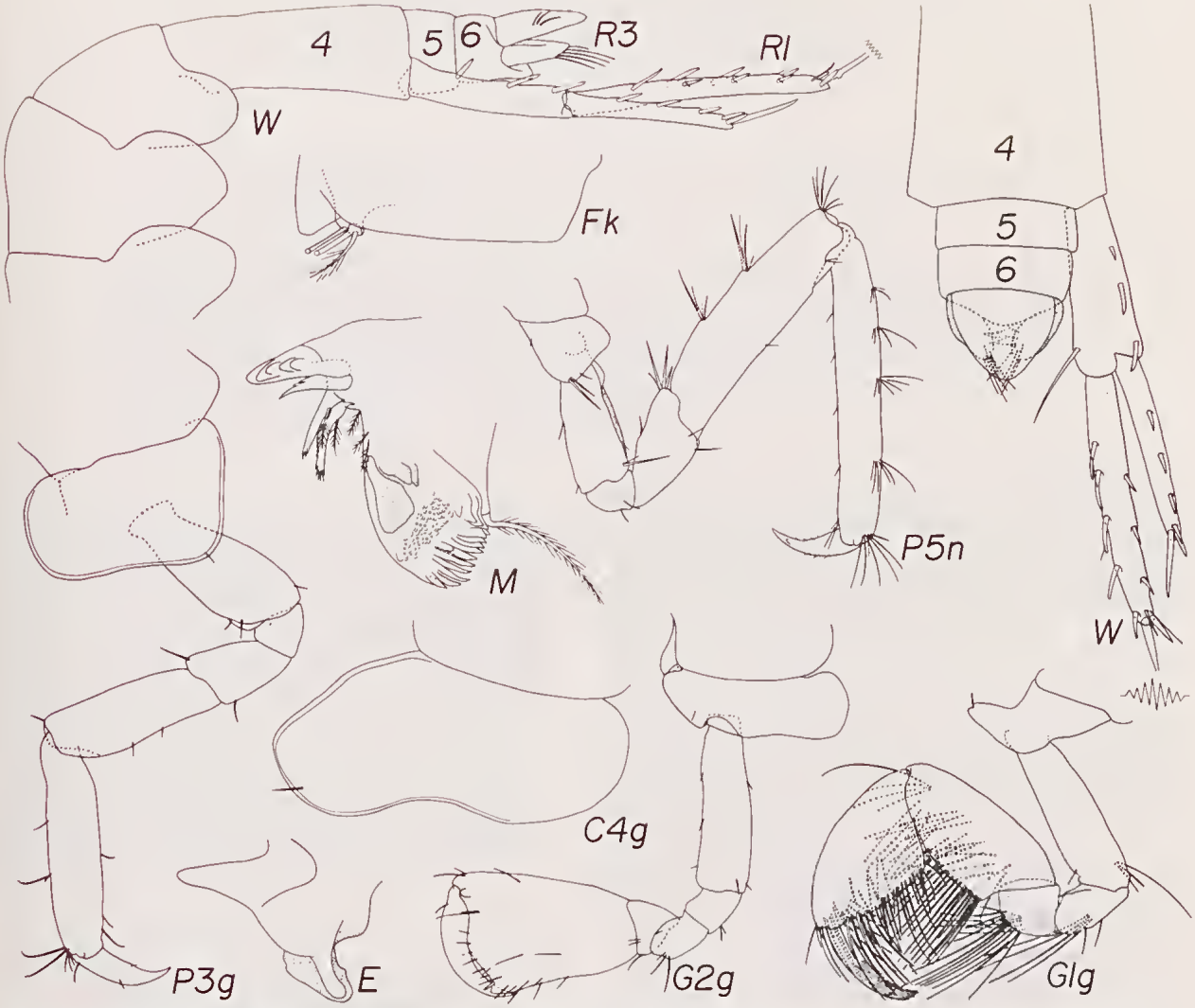

Fig. 7—*Leipsuropus parasiticus* (Haswell) male "d" 2.95 mm; g = female "g" 3.32 mm; k = female "k" 2.85 mm; n = male "n" 4.35 mm.

REFERENCES

Barnard, J. L., 1961. Gammaridean Amphipoda from depths of 400 to 6000 metres. *Galathea Rept.* 5: 23-128.

Barnard, J. L. & Drummond, M. M., 1978. Gammaridean Amphipoda of Australia, Part III: The Phoxocephalidae, *Smithsonian Contr. Zool.* 245: 1-551.

Bousfield, E. L., 1973. *Shallow-water Gammaridean Amphipoda of New England.* Cornell University Press, Ithaca.

Haswell, W. A., 1879. On Australian Amphipoda. *Proc. Linn. Soc. N.S.W.* 4: 245-279.

Haswell, W. A., 1882. *Catalogue of the Australian stalk-and-sessile-eyed Crustacea.* Aust. Mus. Sydney (plus addenda et corrigenda).

Haswell, W. A., 1885. Notes on the Australian Amphipoda. *Proc. Linn. Soc. N.S.W.* 10: 95-114.

McCain, J. C., 1969. A new species of deep sea amphipod (Gammaridea) belonging to the genus *Runanga. N. Z. J. mar. freshw. Res.* 3: 17-19.

Sars, G. O., 1895. *An account of the Crustacea of Norway with short descriptions and figures of all the species.* 1, A1b. Cammermeyers Forlag, Christiania.

Say, T., 1817. On a new genus of Crustacea and the species on which it was established. *J. Acad. nat. Sci. Philad.* 1: 49-52.

Sivaprakasam, T. E., 1970. A new species and a new record of Amphipoda from the Madras coast. *J. mar. biol. Ass. India* 10: 274-282.

Smith, S. I. 1880. On the Amphipodus genera, *Cerapus*, *Unciola*, and *Lepidactylis*, described by Thomas Say. *Trans. Conn. Acad. Arts Sci.* 4: 268-277.

Stebbing, T. R. R., 1899. On the true *Podocerus* and some new genera of amphipods. *Ann. Mag. nat. Hist.* ser 7, 3: 237-241.

Stebbing, T. R. R., 1906. Amphipoda I. Gammaridea. *Das Tierreich* 21.

Stebbing, T. R. R., 1910. Crustacea. Part 5. Amphipoda. Sci. Res. Trawling Exped. H.M.C.S. "Thetis". *Mem. Aust. Mus.* 4: 565-658.